THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
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Commissioner

TO: West Nile Virus (WNV) **Contact Person**

FROM: Mark S. Buffone, Department of Agricultural Resources-Pesticide Bureau
WNV Larvicide Training and Permit Program

DATE: May 3, 2004

SUBJECT: 2004 WNV Permits

The purpose of this memorandum is to seek cooperation from you (the West Nile Virus Larvicide Program Contact), such that the following permits and guidance information is distributed to the named municipal personnel on the enclosed 2004 permits. This memorandum includes practical guidance to assist the municipal WNV larvicide programs and increase their level of success.

Introduction

As a designated Contact Person for your municipality, please find enclosed 2004 WNV Permits for those individuals who have been trained and tested to use specific mosquito larvicides. There are a total of 804 individuals who have participated in WNV training and passed the test during the year 2000, 2001, 2002, or 2003.

These permits are being provided to you because the Department has received your 2003-larvicide use reports. (*Remember, this time-limited permit, allows your employees to legally use only dry formulations of registered mosquito larvicides in catch basins of the community they are employed).*

REVIEW OF WNV Larvicide Program Requirements

In order to issue 2004 permits, each municipality involved in the WNV larvicide program must:

1. **Designate a contact person:** Title, Address, Telephone Number, and E-mail.
   Note: If the Contact Person previously designated has changed, please complete a new enclosed application (see last page). Please mail all completed applications to the person and address as follows:

Mark S. Buffone
Department of Agricultural Resources-Pesticide Bureau
251 Causeway Street; Suite 500
Boston, MA 02114-2151

2. **Submit larvicide use report information** OR **letter stating that no larvicides were used during the 2003 mosquito season.**

3. **Verify that the municipality has at a minimum one (1) person who holds a regular pesticide certification or license.** Please note: The Department strongly encourages permanent licensing of all employees using larvicides, as this unique larvicide permitting program for municipalities may not be available in future years. The enclosed permit is not a regular pesticide certification or license. Permanent licensing information can be obtain by going to the following website: http://www.state.ma.us/dfa/pesticides/)

4. **Municipal employees must obtain a WNV permit** by successfully completing a one-time training and examination. In other words, any municipal employee who has a regular pesticide certification or license, or has previously received a municipal WNV larviciding permit need not participate in future training and testing.

2004 Guidance Information

Experts believe that the **primary** type of mosquito involved in the transmission of WNV to humans is of the Culex spp. (pronounced Q-lex) mosquito; however, additional research is needed to provide better information that will help verify the most effective ways to control WNV.

Experts generally agree that controlling Culex mosquitoes at their source is a prudent measure in attempting to prevent human illness and even death caused by WNV. Culex mosquitoes breed in a variety of areas such as artificial containers that hold water including municipal catch basins. These catch basins can hold a volume of water equaling up to 48 cubic feet of water. Such water may become organic and stagnant and provide ideal conditions for mosquito breeding as well as provide shelter for resting adults**. As a rule of thumb, Culex populations will begin to breed in early June and populations will build up during the warmer summer months into the late summer.**

The objective of the Department of Agricultural Resources-Pesticide Bureau WNV Larvicide Program is to train and "permit" municipal employees so that they can legally treat catch basins with specifically approved products. Treating catch basins may reduce and/or delay the mosquito population buildup and may help protect public health.

Importance of Timing

Two municipalities who chose to implement a WNV program failed to consider important factors prior to the implementation. Both municipalities treated their catch basins using larvicide briquet effective for 30-days.

The first municipality treated much too early in the season (the month of April). Culex mosquitoes are not usually found breeding until June. This municipality treated too early needlessly expended funding and resources that had no effect on WNV.

The second municipality treated much too late in the season (the month of October). During this time, Culex mosquitoes have already begun readying themselves for overwintering and are not usually breeding heavily at this time. This municipality treated too late likewise expended funding and resources that had no effect on WNV.

The following steps are recommended in the management of Culex mosquitoes in catch basins.

Step 1: Catch Basin Inspection of Function and Cleaning

It would be prudent to consider inspections of catch basins for proper functionality. In other words, are the catch basins in good working condition and holding water or are they broken or clogged with sand and trash? Inspecting and cleaning should be done **prior to your WNV larvicide treatment operation**. Now is a good time to coordinate the following:

- Dates of catch basin cleaning **before** larvicide operations begin.
- Assignment of personnel involved in larvicide operation.
- Mapping of anticipated larvicide operation.
- Purchase of larvicide product (see purchase information section)
- Special Larvicide Permit Renewal or obtaining a regular pesticide license (see http://www.state.ma.us/dfa/pesticides/licensing/bulletin/index.htm)
- Record keeping information
- Department of Public Health Information (see http://www.state.ma.us/dph/wnv/wnv1.htm)

Step 2: Catch Basin Mosquito Breeding Inspection

Although it would be time-consuming and impractical to survey all catch basins in many municipalities due to their large number, it is recommended that a small number should be checked for mosquito breeding **prior** to any larvicide operation to insure treatments will be effective. This monitoring step is important in any Integrated Pest Management (IPM) approach. Treating catch basins with mosquito larvicides, without any monitoring, is not consistent with the principals of Integrated Pest Management.

Prying off catch basin grates with a pry bar and scooping-out (dipping) water in the basin to determine if mosquito larvae are present can yield important information such as the extent of breeding, species type, and stage of growth.

Mosquito control districts are equipped to perform this work. In fact, some mosquito control districts have constructed specialized catch basin water sampling tools that can be used without prying off the catch basin grate. Municipalities that are not members of mosquito control districts may also construct these specialized catch basin water-sampling tools in order to help them make catch basin treatment decisions. If your municipality is a member of a mosquito control district or project, contact them (see page 7) about surveying catch basins and the best time to implement chemical treatments.

IMPORTANT NOTE: A good rule of thumb is that larvicide treatments in catch basins should not occur before June 1st of any year thereby giving the municipality time for cleaning and planning operations nor should treatments occur after October 12th.

Step 3: Larvicide Product Choices

There are a number of factors that should be considered when trying to decide which mosquito larvicide product to use in the catch basins of your municipality. From our experience, many municipalities are making their choices based on cost alone. Please call the Department or speak with a contact from an organized mosquito control project, since while cost is important, the following other factors also need to be considered when properly choosing a product:

- Need for length of control e.g. early season application (late May to early June) vs. late season application (late August to early September).
- Presence of water in the catch basin.
- Extent of breeding in the catch basin.
- Seasonal fluctuations in precipitation (extended periods of dry vs. wet weather).
- Ease of handling e.g. difficulty placing the material in the catch basin e.g. is the product size small or big for the type of catch basin grate covering?), and record keeping. **Note: There is a formulation that is shaped like an ingot so that it fits thru the grates.**
- Ease of record keeping.

The costs of commercially available mosquito larvicides (see chart below) differ depending on their formulation and percent active ingredient. Some products are formulated with a greater amount of active ingredient (chemical responsible for the insecticide activity), which is then slowly released into the water e.g. Altosid Insect Growth Regulator. These products are formulated to release the active ingredient from 30 days up to 150 days.

	PRODUCT NAME	APPROXIMATE PRICE/COST PER CATCH BASIN
1.	**ALTOLSID XR BRIQUETS (150 DAY)**	**$2.65**
2.	**ALTOSID BRIQUETS (30 DAY)**	**$0 90**
3.	**ALTOSID PELLETS (30 DAY)**	**$0. 44**
4.	**VECTOLEX CG**	**$0.17**
5.	**VECTOLEX WSP**	**$ 0.75**
6.	**BACTIMOS BRIQUETS**	**$0. 64**
7.	**BTI DUNKS**	**$0. 56**

When reviewing product choices, the price per catch basin is only one factor. You need to consider many other things such as the extent of breeding, seasonal fluctuations in precipitation, time (month) of season, ease of treatment (is the product size small or big for the type of catch basin grate covering?), and record keeping (see examples below). **Note: Of the two (2) Altosid XR Briquet formulations, only the Altosid Ingot XR Briquet is designed to fit into a catch basin grate.**

Example One: Placing one 30-day Altosid briquet in a catch basin is easier than measuring out the proper amount of Altosid pellets. In addition, it's easier to keep track (record-keeping) of using one 30-day Altosid briquet per catch basin vs. keeping track of measured 2/3 tablespoon of Altosid pellets per catch basin. The downside of this choice is that the Altosid briquet is double the cost of the pellets.

Example two: Placing one Vectolex Water Soluble Packet (WSP) in a catch basin is easier than measuring out the proper amount of Vectolex CG granules. Likewise it's easier to keep track (record-keeping) of using one pouch of Vectolex WSP per catch basin vs. keeping track of the measured granules of Vectolex CG per catch basin. Once again, you could derive the same benefits from choosing a less expensive Vectolex CG, but the delivery and record keeping would be more difficult.

Please note that the choice of a Vectolex product has the advantage of recycling; where it continues to provide control of any new breeding as long as the catch basin remains wet. To take advantage of Vectolex recycling properties, it is best used when immature or larval populations are peaking during July, August, and September. However, during a dry-down (regarding seasonal precipitation fluctuations) this would not be a good choice.

If your municipality had the budget to cover the entire season, the extended 150-day release briquets would be the ideal product to apply in June. Note: Some specialists have cited that this formulation may only be active for 90 days. Keep this mind and strive to monitor/do larval survey checks to determine product efficacy status.

Otherwise, a good rule of thumb is to treat catch basins starting in June with a 30-day Altosid briquet or pellets. Thereafter, the municipality could switch to a Vectolex product for late July and August (if catch basins hold water). If catch basins are dry, then the Altosid briquet could be used.

VERY IMPORTANT: Alternating product choices helps to deter the chances of insect resistance in future years. This means you should switch products after a couple of years of using the same product (e.g. switching from Vectolex to Altosid or vice versa for the purpose of resistance management).

Bti

The choice of using products such as Bactimos or "the dunks" is least desirable. These products contain the active ingredient Bti that is effective against mosquito larvae. **However, this active ingredient will not be very effective in most catch basin environments.**

Lastly, if you do not have the kind of budget necessary to implement comprehensive larvicide programs, consider using whatever available funding you may have and focus on the months of July and August especially in designated areas close to sensitive populations such as nursing and convalesce homes.

Step 4: Purchase Product(s)

MASSACHUSETTS MOSQUITO CONTROL LARVICIDE CONTRACTOR LIST

Clark Mosquito Control Products Contact: Wally Terrill

(Tel) 800-323-5727 (Fax) 800-832-9344

(E-Mail) wallyterrill@clarkmosquito.com

UNIVAR USA Inc (formerly Van Waters & Rogers) **Contact: George Williams**

(Tel) 800-888-4897 (Fax) 781-939-3150

(E-mail) george.williams@univarusa.com

Adapco

(Tel) 800-367-0659 (Fax) 781-939-3150 **Contact: Ted Bean**
(E-mail) TBean@e/adapco.comT

Step 5: Education

Education should be a critical component of your WNV implementation operation. Political leaders in your community should be provided this information or at a minimum educated about the life cycle of the Culex mosquito and the most meaningful times to treat catch basins.

Media reports of dead crows and human illness can prompt or pressure a municipality to treat when the use of products may not be effective (refer to examples above). In addition, your municipality through the Board of Health and State Department of Public Health should be providing information to residents on disease risks, personal protection, and how to best avoid mosquitoes.

For additional information or questions, please contact
Mark S. Buffone
Tel. (617) 626-1777 Fax (617) 626-1850
OR
Your organized mosquito control district listed below

Cape Cod Mosquito Control
John Doane, Superintendent
(508) 775-1510
fax: (508) 362-7917
ccmcp@cape.com

Suffolk County Mosquito Control
Bruce Landers, Superintendent
(617) 361-0550
fax: (617) 361-4954
balscmcp1974@yahoo.com

Central MA Mosquito Control
Tim Deschamps, Asst.Superintendent
(508) 393-3055
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cmmcp@cmmcp.org

Berkshire County Mosquito Control
Jake Jurgensen, Superintendent
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fax: (413) 447-7185
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Norfolk County Mosquito Control
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Bristol County Mosquito Control
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